

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, a paragraph has been amended on page 8.

Claims 1-22 are now pending in this application.

Applicants' Representative thanks Examiner B. Talbot for the helpful discussion on September 3, 2004. The substance of the discussion is detailed below.

**Rejections Under 35 U.S.C. § 103**

The Office has finally rejected the claims as obvious over either of U.S. Patent No. 5,571,401 (Lewis 1) or 6,290,911 (Lewis 1) in view of U.S. Patent Nos. 5,756,879 (Yamagishi), 4,454,007 (Pace) or 5,296,819 (Kuroiwa). The Office recognizes that Lewis 1 and 2 differ from the claims in not disclosing coating a first conductive layer and then a second non-conductive polymer layer (Office Action, page 3, lines 4-5). The Office states that Yamagishi, Pace, and Kuroiwa disclose covering and connecting electrodes with a conductive material, and the conductive material is altered to tailor the sensors to detect different compounds (Office Action, page 3, lines 6-9). The Office concludes that it would have been obvious to modify the Lewis patents by coating layers (Office Action, page 3, lines 10-14). The Office states that it would be a matter of "design choice" to use the entire spectrum of 100% polymer to 100% conductive material based on the particular analyte (Office Action, page 3, lines 15-19).

The M.P.E.P. instructs examiners that "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. 2143.03 (May 2004) citing *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Here, all of the limitations of the present would not be met by the proposed combination of references. Claim 1 states "depositing at least one non-conductive or insulating polymer film as a second layer onto said first layer of conducting material." By relying on "design choice" to satisfy all the limitations, the Office acknowledged that all limitations are not met by the combination of references.

The references provide no reason to deposit a "non-conductive or insulating polymer film as a second layer onto said first layer of conductive material." Pace provides the only disclosure of a layer of non-conductive material. However, that layer is immediately above the substrate layer 1 (see FIG. 2) and is not a second layer deposited onto a first layer of conducting material.

Further, Pace is not properly combined with Lewis 1 or 2, because Pace relates to an electrochemical half cell wherein a liquid analyte completes the electrical circuit. The Pace half cell measures relative concentrations of ions in a liquid analyte (col. 2, ll. 4-5). Pace does not disclose depositing a conductive layer to connect the electrodes. The sensor in Pace operates by a completely different technical principle than the sensor of the present invention as claimed. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." M.P.E.P. 2143.01 (May 2004) citing *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959). Under this M.P.E.P. directive, Pace is improperly combined with Lewis 1 or 2.

Kuroiwa does not disclose a non-conductive or insulating polymer layer. Combining Lewis 1 or 2 and Kuroiwa would not satisfy all the limitations of the present claims. Moreover, there would have been no motivation to combine the Kuroiwa layer with the Lewis layer because the Kuroiwa and Lewis sensors operate by a completely different technical principle. Kuroiwa's sensor operates by measuring capacitance changes in a single polymer layer connecting the electrodes. The layer is a moisture sensitive film that changes capacitance by change in its moisture content (col. 3, ll. 32-34). In contrast, the layer of Lewis 1 and 2 operates by a change

in conductivity. The Office's proposed modification of Lewis is not *prima facie* obvious because the modification would change the principle of operation of the Lewis sensors.

Yamagishi does not disclose a non-conductive or insulating polymer layer. In fact, Yamagishi teaches away from non-conductive polymers (col. 7, ll. 28-30). Combining Lewis 1 or 2 and Yamagishi would not satisfy all the limitations of the present claims. And Yamagishi would have discouraged the necessary modification of introducing a non-conductive or insulating polymer layer.

If the Office considers that it would have been obvious to combine layers between the secondary references, Yamagishi would have discouraged adding the hydrophilic Kuroiwa layer, because Yamagishi teaches away from hydrophilic surfaces contacting the polymer layer (col. 10, ll. 57-67).

Finally, there is no design choice that would have led to the invention. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." M.P.E.P. 2143.01 (May 2004) citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Here, the art of record does not suggest that it would be beneficial for detecting any particular analyte by the sensors of Lewis 1 or 2 to deposit a "non-conductive or insulating polymer film as a second layer onto said first layer of conductive material." Neither does the art of record suggest any benefit of modifying the sensors of the Lewis patents by depositing two or more layers of materials instead of a blended material.

For all the reasons mentioned, Applicants request that the Office withdraw this ground of rejection.

## **CONCLUSION**

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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